

A Study of the Prevalence of *Hemophilus somnus*, *Mycoplasma bovis* and Bovine Virus Diarrhea Virus in Western Canadian Feedlot Cattle Dying with Heart Lesions

Deborah Haines¹; Doug Myers²

¹Department of Vet Micro, WCVM, Saskatoon, SK

²Boehringer Ingelheim Vetmedica, Cochrane, AB

Introduction

Myocarditis has become an increasingly diagnosed cause of death in fall-placed feedlot calves in western Canada. There are few published studies investigating the pathogens involved in this syndrome. The objective of this case control study is to determine the incidence of three proposed agents that are recognized as causes of infection in feedlot calves.

Materials and Methods

Postmortem samples were obtained from calves that died in western Canadian feedlots from October 1999-June 2000 that could be accurately diagnosed for cause. The three study groups for this investigation were: calves dying of myocarditis that had a visible infarct on necropsy (n = 92); calves dying of fibrinous pneumonia with no heart lesions present (n = 39); and calves dying of gastrointestinal causes (AIP/Bloat, n = 47). The latter two groups served as control cases (infectious/non-infectious) for the study.

Tissue samples were obtained within 24 hours of death and forwarded to WCVM for immunohistochemical (IHC) staining for the presence of antigens of *Mycoplasma bovis*, *Hemophilus somnus* and bovine virus diarrhea virus.

Results and Conclusions

The majority of cases of myocarditis (76 %) were positive for *Hemophilus somnus*, which appears to be the primary pathogen present in this syndrome. A small percentage were also positive for *Mycoplasma bovis* (4.3%) and bovine virus diarrhea virus (4.3%). A high percentage of cases of fibrinous pneumonia were positive for bovine virus diarrhea virus (33%), despite a lack of any lesions or history suggestive of this virus clinically. Non-infectious cases had an extremely low incidence of any antigens apparent on IHC.

Table 1. Antigens present in postmortem heart and lung samples of 178 feedlot calves.

Total	Myocarditis (92)		Fib Pneum (39)		Noninfectious (47)	
	Heart	Lung	Heart	Lung	Heart	Lung
M. bovis	4 (4.3 %)	5 (5.4 %)	0	7 (18 %)	0	0
H. somnus	70 (76.1%)	1 (1 %)	1 (2.6 %)	9 (23 %)	0	0
P. hemolytica	0	1 (1 %)	0	16 (41 %)	0	1 (2.1 %)
BVD-any tissue	4 (4.3 %)		13 (33.3 %)			0